Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A method for improving the biocompatibility of a surgical implant or component for a surgical implant, comprising:

anodically treating at least a portion of a surface of the surgical implant or component that is disposed in a substantially calcium-free, substantially aqueous solution of a phosphorus-containing compound, wherein the surface to be treated comprises a metal selected from the group consisting of titanium, molybdenum, zirconium, nickel, copper, iron, aluminum, vanadium, chromium, cobalt, manganese, ruthenium, silver, beryllium, palladium, yttrium, tantalum, niobium, hafnium, and combinations thereof, and wherein the metal includes less than 98 percent titanium.

2. (original) The method of claim 1, wherein the metal is selected from the group consisting of zirconium alloy, stainless steel alloy, titanium alloy having less than 98 percent titanium, and combinations thereof.

3. (original) The method of claims 1, wherein the phosphorus-containing compound is selected from the group consisting of phosphoric acid, alkali metal dihydrogen phosphate, alkali metal hydrogen phosphate, and combinations thereof.

4. (previously presented) The method of claim 1, wherein the solution is an electrolyte solution.

5. (cancelled)

6. (previously presented) The method of claim 1, wherein the solution is an aqueous solution of phosphoric acid.

7. (original) The method of claim 6, wherein the concentration of the aqueous phosphoric acid solution is between about 0.01 N and 5.0 N.

8. (original) The method of claim 6, wherein the concentration of the aqueous phosphoric acid solution is between about 0.1 N and about 3.0 N.

9. (previously presented) The method of claim 1, wherein the substantially calcium-free solution has less than a 0.04 Molar concentration of a calcium compound.

10. (original) The method of any of claims 1, wherein the substantially calcium-free solution has a sufficiently low calcium concentration to avoid forming a calcium phosphate coating.

11. (original) The method of claim 1, wherein the solution is substantially free from alcohol.

12. (original) The method of claim 1, wherein the solution has a temperature between about 15 °C and about 65 °C during the application of electrical potential.

13. (original) The method of claim 12, wherein the temperature of the solution is between about 25 °C and about 55 °C during the application of electrical potential.

14. (original) The method of claim 1, wherein the solution has a temperature of at least 25 °C during the application of electrical potential.

15. (original) The method of claim 1, wherein the electrical potential is controlled between about 10 volts and about 150 volts.

16. (original) The method of claim 15, wherein the electrical potential is controlled between about 25 volts and about 100 volts.

17. (original) The method of claim 1, wherein the anodic treatment is performed at a controlled electrical potential greater than 25 volts.

18. (previously presented) The method of claim 1, wherein the surface of the surgical implant or component is anodically treated under an electrical potential for between about 15 seconds and about 1 hour.

19. (previously presented) The method of claim 18, wherein the surface of the surgical implant or component is subjected to the electrical potential for between about 1 minute and about 30 minutes.

20. (previously presented) The method of claim 1, further comprising:

disposing the surface of the surgical implant or component in a detergent before disposing the surface in the solution.

21. (previously presented) The method of claim 1, further comprising:

removing oxide films from the surface of the surgical implant or component before performing the anodic treatment.

22. (previously presented) The method of claim 21, wherein the oxide films are removed by disposing the surface of the surgical implant or component in an acid solution.

23. (original) The method of claim 1, further comprising:

applying cathodic potential to a cathode in the solution, wherein the cathode material is selected from platinum, palladium, graphite, gold, titanium, platinized titanium, palladized titanium, and combinations thereof.

24. (previously presented) The method of claim 1, wherein the surface of the surgical implant or component has no electrochemically grown layer of titanium oxide prior to anodic oxidation.

25. (previously presented) The method of according to claim 1, wherein the surface of the surgical_implant or component is formed at least partly of a titanium alloy which includes an element selected from molybdenum, zirconium, iron, aluminum, vanadium and combinations thereof.

26. (original) The method of claim 25, wherein the titanium alloy is Ti-6Al-4V.

27. (original) The method of claim 1, wherein an anodic treatment forms a film having a thickness less than 2000 Angstroms.

28. (original) A surgical implant formed by the method of claim 1.

29. (original) The method of claim 1, wherein the surgical implant is an orthopedic implant.

30. (original) The method of claim 1, wherein the surgical implant is a dental implant.

31. (previously presented) The method of claim 29, wherein the surface of the surgical implant or component is porous.

32. (previously presented) The method of claim 31, wherein the porous surface is such that tissue of a human or an animal can grow into pores of the porous surface.

33. (original) The method of claim 32, wherein the tissue is selected from bone, marrow and combinations thereof.

34. (original) The method of claim 32, wherein the porous external surface comprises sintered metal particles.

35. (previously presented) The method of claim 31, wherein the anodically treated surface comprises phosphorus and oxygen to a depth of no more than about 1 micron.

36. (previously presented) The method of claim 35, wherein the anodically treated surface comprises phosphorus and oxygen to a depth between about 0.1 microns and about 0.9 microns.

37. (previously presented) The method of claim 36, wherein the anodically treated surface comprises phosphorus and oxygen to a depth between about 0.2 microns and about 0.5 microns.

38. (previously presented) The method of claim 1, wherein the anodically treated surface comprises phosphorus and oxygen to a depth between about 0.1 microns and about 5 microns.

39. (previously presented) The method of claim 1, wherein the anodically treated surface comprises phosphorus and oxygen to a depth greater than about 1 micron.

40. (original) The method of claim 1, further comprising:

depositing hydroxyapatite over the anodically treated surface, wherein the hydroxyapatite is applied by a method selected from plasma deposition and electrodeposition.

41 – 105. (cancelled)